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ABSTRACT

This study examined associations between mothers' interaction styles and disciplinary strategies, and children's relational and overt forms of aggression; considered sex differences in these associations; evaluated the contributions and interplay of mothers' interaction styles and disciplinary strategies, and children's aggression; and examined these connections during the transition into middle school. Participating were 140 European- and African-American married, working-class mothers and their sixth-grade children in North Carolina. Data were obtained through questionnaires completed separately by mothers and adolescents, videotapes of dyads during an interaction task in a laboratory setting at the beginning of the school year, and questionnaires regarding peer aggression completed by teachers at the end of the school year. Findings indicated that boys were more overtly aggressive than girls, and girls were more relationally aggressive than boys. Patterns of correlations between parenting variables and relational aggression were highly similar for boys and girls. Associations between parenting and overt aggression were different for boys and girls, and associations were much stronger for boys than girls. There were four models for which mothers' interaction styles and disciplinary strategies were significantly associated with boys' aggression, but no such models were identified for girls' aggression. Multiple regression analyses suggested that only mothers' interaction styles accounted for a significant portion of variance in boys' overt aggression. There was no evidence that mothers' disciplinary strategies mediated this association; however, mothers' negative interaction styles moderated the effect of child reports of harsh discipline on boys' overt aggression. (KB)

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Familial Antecedents of Children's Overt and Relational Aggression

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Recently, researchers examining different forms of children's aggression found that relational aggression (i.e., purposeful manipulation and behaviors intended to damage friendships or feelings of inclusion within a peer group) was more common among girls than overt aggression (Crick, 1997; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995) and that relational aggression was linked with children's adjustment difficulties within the peer group context (Crick, 1996; Tomada & Schneider, 1997). Although the importance of relational aggression has been established, especially for enhancing our understanding of girls' future social adjustment, familial antecedents of relational aggression have not yet been considered. This study was designed to examine possible connections between mothers' interaction styles and disciplinary strategies and children's overt and relational forms of aggression and to consider the possibility that these connections may be different for males and females.

A second purpose of this study was to evaluate the contributions and possible interplay of mothers' interaction styles and disciplinary strategies with respect to children's aggression. As suggested by Darling & Steinberg (1993), researchers of children's social development have begun to explore components of parenting, including interaction styles and disciplinary strategies (e.g., Barth & Parke, 1993; Dishion, 1994; MacKinnon-Lewis et al., 1994; Strassberg, Dodge, Bates, & Pettit, 1992). However, the majority of these researchers have not examined these parenting attributes simultaneously, within a single model. Consequently, the unique contributions and processes through which interaction styles and disciplinary strategies influence children's social development are still not

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well understood. One exception is the study conducted by Mize & Pettit (1997), in which both mothers' social coaching about peer relationships and parent-child interaction styles were found to make independent contributions to children's social competence and influence children's social outcomes in different ways. The present study addresses independent contributions of mothers' interaction styles and disciplinary strategies to children's overt and relational aggression and explores some of the complex processes through which these parenting attributes may influence children's aggression.

In summary, the goals of the present study were to (a) examine associations between mothers' interaction styles and disciplinary strategies and children's relational and overt forms of aggression; (b) consider possible sex differences in connections between mothers' interaction styles and disciplinary strategies and children's relational and overt aggression; (c) evaluate the contributions and possible interplay of mothers' interaction styles and disciplinary strategies with respect to children's aggression; and (d) examine connections between family and peer contexts during a period in which children were confronted with multiple challenges associated with the co-occurrence of the onset of adolescence and the transition into middle school.

Method

Sample and Overview

This study was conducted within the context of a larger study examining children's transitions through middle school. At the beginning of the school year, data were collected from 140 European-American and

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African-American (80 European-American), married, working-class mothers and their 6th grade children (74 boys) from Greensboro, North Carolina. During a visit to the laboratory that lasted approximately two-hours, mothers and children were separated to complete questionnaires in privacy, then they were reunited and video-taped while participating in a 20 minute interaction task. At the end of the school year, children's teachers completed two questionnaires regarding children's aggression.

Measures

Observed Interaction Task

The interaction task was designed to elicit information about mother-child interactions and mothers' disciplinary strategies. Mother-child dyads were alone in the room during the task and their interactions were later assessed using a global coding system (adapted from Iowa Family Interaction Scales: Melby et al., 1993). Interactions were coded on a seven point scale ranging from not characteristic (1) to mainly characteristic (7). Behavioral codes were determined by frequency, intensity, and context of behaviors.

Mothers' Interaction Styles

Mothers' Positive Interaction Styles

Observations of mothers' warmth and support, prosocial behavior, communication, and listener responsiveness were averaged to create a measure of mothers' positive interaction styles (α=.91).

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Mothers' Negative Interaction Styles

The mean of behavioral codes for mothers' hostility and antisocial behavior were used to represent mothers' negative interaction styles (α=.87).

Mothers' Disciplinary Strategies

Harsh Discipline

Observed Harsh Discipline: The behavioral code for mothers' harsh discipline was determined through verbal content and in-task behaviors.

Parent Management Questionnaire (PMQ): A subscale from the PMQ (Eccles, 1993), which assessed mothers' likeliness to use physical punishment and threats of physical punishment, was used to represent mother report of harsh discipline (α=.59).

Youth Family Perception Questionnaire (YFP): A subscale from the YFP (Eccles, 1993), which assessed mothers' hitting, pushing, and grabbing of children during the past month, was used to represent child report of harsh discipline (α=.63).

Children's Aggression

For measures completed by children's teachers: 1) items were standardized within classrooms [In classrooms with only one participant, standardization was not possible. Items were systematically rescaled, allowing their midpoints to equal those of standardized items (midpoint=0)]; 2) the mean of math and english teachers' responses was computed for each item on overt (r=.76, p.0001) and relational (r=.31, p.001) subscales. The resulting mean scores were used to compute

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children's overt and relational aggression variables (single reports were used in the few cases for which only one teacher reported).

Children's Overt Aggression

Child Behavior Checklist – Teacher Report Form (CBCL-TRF): Items from the aggression subscale of the CBCL-TF (Achenbach, 1991) were summed to create a composite of children's overt aggression (α=.91).

Children's Relational Aggression

Ratings of Children's Social Behavior Scale – Teacher Form (CSBS-T): Children's teachers completed the CSBS – T (Crick, 1996), which included a subscale of items that assessed and represented children's relational aggression (e.g., ignoring, gossiping, and excluding peers from group activities) (α=.92).

RESULTS

Sex Differences in Children's Expressions of Aggression

Replicating previous findings by Crick and her colleagues (Crick, 1997; Crick et al., 1997; Crick & Grotpeter, 1995), preliminary analyses suggested that there were sex differences in overt and relational aggression. Because of high correlations between relational and overt aggression for both boys and girls (see Tables 1 and 2), analysis of covariance was used with overt aggression as the covariate in the analysis of relational aggression and with relational aggression as the covariate in the analysis of overt aggression (see Crick, Casas, & Mosher, 1997 and Tomada & Schneider, 1997 for similar approach). Analyses yielded a significant main effect of gender for overt [$F(1, 137)=8.06$, $p<.01$] and relational [$F(1, 137)=3.83$, $p<.05$] aggression. Boys (M=- 6.22, SD=9.11) were more

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overtly aggressive than girls (M=-9.16, SD=.7.66), whereas girls (M=-.34, SD=.89) were more relationally aggressive than boys (M=-.38, SD=.71). One implication of this finding is that processes associated with the development of overt and relational aggression may be different for boys and girls. For this reason, and to be consistent with previous studies examining overt and relational aggression, further analyses were conducted separately for boys and girls.

Interrelations Among Variables

Pearson-product moment correlations were computed to examine associations between mothers' interaction styles and disciplinary strategies and boys' and girls' overt and relational aggression (see Tables 1 and 2). For girls, a trend suggested that maternal negativity was associated with higher levels of relational aggression (r=.18, p<.10) and there was a significant association between observer report of mothers' harsh discipline and overt aggression (r=.20, p<.05). For boys, maternal negativity was associated with higher levels of relational aggression (r=.21, p<.05) and overt aggression (r=.33, p<.01), maternal positivity was associated with lower levels of overt aggression (r=-.32, p<.01), and mother and child reports of harsh discipline were associated with higher levels of overt aggression (r=.21, p<.05, r=.21, p<.05, respectively). Patterns of correlations between parenting variables and relational aggression were highly similar for boys and girls. In contrast, findings suggest that associations between parenting and overt aggression were different for boys and girls and associations were much stronger for boys than for girls.

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Contributions and Possible Interplay of Mothers' Interaction Styles and Disciplinary Strategies Regarding Children's Aggression

There were four models for which both mothers' interaction styles and disciplinary strategies were significantly associated with children's aggression: (1) mothers' negative interaction styles, mother report of harsh discipline and boys' overt aggression, (2) mothers' negative interaction styles, child report of harsh discipline, and boys' overt aggression, (3) mothers' positive interaction styles, mother report of harsh discipline and boys' overt aggression, and (4) mothers' positive interaction styles, child report of harsh discipline, and boys' overt aggression. These models were further examined to evaluate the contributions of mothers' interaction styles and disciplinary strategies and the possible interplay among these variables, in regard to children's aggression. Due to a lack of significant associations between parenting and girls' aggression, there were no similar models for girls.

Do Mothers' Interaction Styles and Disciplinary Strategies Make Unique Contributions to Children's Aggression? To address the unique contributions of mothers' interaction styles and disciplinary strategies to children's aggression, multiple regression analyses were conducted for relevant models (Tabachnick & Fidell, 1996). Results suggest that when considering mothers' interaction styles and disciplinary strategies simultaneously, only mothers' interaction styles accounted for a significant portion of the variance in boys' overt aggression (see Table 3).

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Do mothers' disciplinary strategies mediate the association between mothers' interaction styles and children's aggression? According to Baron and Kenny (1986), three conditions must be met to consider mothers' disciplinary strategies as a mediator in the association between mothers' interaction styles and boys' overt aggression: (1) the independent and mediator variables (mothers' interaction styles and disciplinary strategies, respectively) must be correlated with each other, (2) both mothers' interaction styles and disciplinary strategies must be correlated with boys' overt aggression and (3) the Beta coefficient between mothers' interaction styles and boys' overt aggression must be reduced, compared to the bivariate correlation, when both mothers' interaction styles and disciplinary strategies are used as predictors in a simultaneous regression equation. As shown in Table 3, the Beta coefficient between mothers' interaction styles and boys' overt aggression is only slightly reduced and the association between mothers' disciplinary strategies and boys' overt aggression is no longer significant when both mothers' interaction styles and disciplinary strategies are considered simultaneously. Thus, there was no evidence that mothers' disciplinary strategies mediated the association between mothers' interaction styles and boys' overt aggression.

Do mothers' interaction styles moderate the association between mothers' disciplinary strategies and children's aggression? To test for moderation in the four models for which both mothers' interaction styles and disciplinary strategies were significantly associated with children's aggression, boys' aggression was regressed on mothers' interaction styles (positive and negative), mothers' harsh discipline (mother and child

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reports), and the product of mothers' interaction styles and harsh discipline (Cohen & Cohen, 1983). Moderator effects are indicated by the significant effect of the interaction term while controlling for the moderator (mothers' interaction styles) and independent variable (mothers' harsh discipline) (Baron & Kenny, 1986). Results suggest that mothers' negative interaction styles moderate the effect of child report of harsh discipline on boys' overt aggression (see Table 4). That is the interaction term for mothers' negative interaction styles and child report of harsh discipline made a significant contribution to boys' overt aggression. To further explore these effects, correlations between child report of harsh discipline and boys' overt aggression were examined separately for high and low negative maternal interacion styles. Mothers were classified into high and low groups for positive and negative interaction styles using a median split on each variable (40 boys in the low group and 34 boys in the high group for negative interaction styles; 33 boys in the low group and 41 boys in the high group for positive interaction styles). These correlations are shown in Table 5. For high levels of maternal negativity, harsh discipline was associated with boys' overt aggression, but harsh discipline was not associated with boys' aggression at low levels of maternal negativity.

DISCUSSION

The results of this study enhance our understanding of the connection between parenting and children's aggression in several ways. First, findings suggest that parenting may be linked with children's overt and relational aggression. Interestingly, sex differences were found only in connections between parenting and children's overt aggression. Parenting

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was more often and more strongly associated with boys' overt aggression than with girls' overt aggression, whereas the connections between parenting and relational aggression were similar for boys and girls. This is surprising, given the sex differences in both overt and relational aggression found by Crick and her colleagues (Crick, 1997; Crick et al., 1997; Crick & Grotpeter, 1995)) and replicated in the present study. Furthermore, in comparison to connections between parenting and children's relational aggression, connections between parenting and children's overt aggression were stronger and occurred more often. These results may simply reflect mothers' reinforcement of societal norms, which prescribe (1) overt aggression as the preferred form of aggression among males, and (2) a greater tolerance for aggression among males than among females. However, it may also be that the family context does not provide equal opportunities to witness and practice overt and relational aggression. In fact, the primary correlates of relational aggression may lie outside of the family context.

This study also demonstrates the importance of examining independent contributions of mothers' interaction styles and disciplinary strategies and the processes through which these parenting variables influence children's aggression. Although there were no models in which mothers' interaction styles and disciplinary strategies were both significantly associated with relational aggression or girls' overt aggression, there were four models in which these parenting variables were both significantly associated with boys' overt aggression. Findings suggest that when mothers' interaction styles and disciplinary strategies were considered

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simultaneously, only mothers' interaction styles accounted for a significant proportion of unique variance in boys' overt aggression. However, further analyses revealed that mothers' disciplinary strategies may work in conjunction with mothers' interaction styles, as findings suggest that mothers' negative interaction styles may moderate or alter the association between boys' perceptions of harsh discipline and their overt aggression. Specifically, when maternal negativity was high, harsh discipline was associated with boys' overt aggression. In contrast, when maternal negativity was low, the association between harsh discipline and boys' aggression no longer emerged. The link between harsh discipline and aggression has been well established in the literature (see Baumrind, 1966; Berkowitz, 1973; Patterson, Dishion, & Banks, 1984, for reviews). However, these findings suggest that it may not be harsh discipline alone that encourages aggression, rather it may be the combination of harsh discipline and negative maternal interaction styles. Furthermore, the fact that the association between harsh discipline and aggression has emerged consistently suggests that many parents who use harsh forms of discipline may also interact negatively with their children.

In sum, findings from this study suggest that associations between mothers' disciplinary strategies and interaction styles and children's aggression may vary as a function of child sex and the particular form of aggression being considered (overt vs. relational). These findings suggest that parental socialization may reinforce societal norms affiliated with gender-normative expressions of aggression. This study also identified some of the complex processes through which mothers' disciplinary

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strategies and interaction styles may be linked with boys' aggression. Specifically, mothers' negativity may moderate the way in which harsh discipline is associated with boys' overt aggression. Finally, this study identified connections between the family and peer contexts during a period in which children were confronted with multiple challenges presented by the co-occurrence of the onset of adolescence and the transition into middle school.

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Table 1. Interrelations among Mothers' Interaction Styles, Disciplinary Strategies, and Boys' Aggression (n=74).

	1	2	3	4	5	6	7
1. Mothers' Negative Interaction Styles		-.59****	.10	.10	.37***	.21*	.33**
2. Mothers' Positive Interaction Styles			-.21*	-.22*	-.32**	-.10	-.32**
3. Mother Report of Harsh Discipline				.20*	.12	.09	.21*
4. Child Report of Harsh Discipline					.25*	.09	.21*
5. Observer Report of Harsh Discipline						.01	.11
6. Boys' Relational Aggression							.66****
7. Boys' Overt Aggression							

*p<.05 **p<.01 ***p<.001 ****p<.0001.

Table 2. Interrelations among Mothers' Interaction Styles, Disciplinary Strategies, and Girls' Aggression (n=66).

	1	2	3	4	5	6	7
1. Mothers' Negative Interaction Styles		-.55****	.14	-.19+	.28*	.18+	.11
2. Mothers' Positive Interaction Styles			-.03	.01	-.35**	.02	-.07
3. Mother Report of Harsh Discipline				.10	.38**	.11	.04
4. Child Report of Harsh Discipline					.22*	-.05	.10
5. Observer Report of Harsh Discipline						-.05	.20+
6. Girls' Relational Aggression							.63****
7. Girls' Overt Aggression							

*p<.05 **p<.01 ***p<.001 ****p<.0001.

Table 3. Multiple Regression Analyses Predicting Boys' Overt Aggression.

		r	R^2	β
Model 1:	Mothers' Negative Interaction Styles	.33**		.32**
	Mother Report of Harsh Discipline	.21*	.14*	.18
Model 2:	Mothers' Negative Interaction Styles	.33**		.32**
	Child Report of Harsh Discipline	.21*	.14*	.18
Model 3:	Mothers' Positive Interaction Styles	-.32**		-.29**
	Mother Report of Harsh Discipline	.21*	.12**	.15
Model 4:	Mothers' Positive Interaction Styles	-.32**		-.29**
	Child Report of Harsh Discipline	.21*	.12**	.15

*P<.05 **p<.01.

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Table 4. Hierarchical Regression Analyses Predicting Boys' Overt Aggression.

		r	ΔR^2	β
Model 1:				
Step 1	Mothers' Negative Interaction Styles	.33**		.22
	Mother Report of Harsh Discipline	.21+	.11**	.10
Step 2	Interaction Term	.37***	.04**	.14
Model 2:				
Step 1	Mothers' Negative Interaction Styles	.33**		-.29
	Child Report of Harsh Discipline	.21+	.11**	-.26
Step 2	Interaction Term	.42****	.08**	.81*
Model 3:				
Step 1	Mothers' Positive Interaction Styles	-.32**		-.24
	Mother Report of Harsh Discipline	.21+	.10**	.23
Step 2	Interaction Term	.03	.02*	-.09
Model 4:				
Step 1	Mothers' Positive Interaction Styles	-.32**		-.30
	Child Report of Harsh Discipline	.21+	.10**	.13
Step 2	Interaction Term	.04	.02*	.02

Note: ΔR^2 = change in R^2; Beta are at final step.
+p<.10 *P<.05 **p<.01.

Table 5. Correlations Between Child Report of Harsh Discipline and Boys' Overt Aggression

Levels of Mothers' Negative Interaction Style	
High Negativity	.35*
Low Negativity	.05

*p<.05.

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